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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/673,170

09/30/2003

Manfred Schuster

4001-1154

9804

466

7590

03/21/2005

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EXAMINER

YUN, JURIE

ART UNIT

PAPER NUMBER

2882

DATE MAILED: 03/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/673,170

Applicant(s)

SCHUSTER, MANFRED

Examiner

Jurie Yun

Art Unit

2882

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 January 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. The amendment filed 1/21/05 has been entered.

Claim Objections

2. Claim 9 is objected to because of the following informalities: there is lack of antecedent basis for "analyzer". Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 5 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The limitations conveyed by the term "parametric X-radiation" are unclear.

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 16 and 20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The disclosure fails to teach how to process several phase contrast images

Art Unit: 2882

to form an overall phase contrast image (claim 16) and how to process several phase contrast images to form a phase contrast computer tomogram (claim 20).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over S.W. Wilkins et al., "Phase-Contrast Imaging Using Polychromatic Hard X-Rays," Nature, V. 384, 1996, pp. 335-338.

9. With respect to claims 1-20, Wilkins et al. disclose (pp. 335-338) a phase contrast X-ray device for creating a phase contrast image of at least one object, comprising: at least one X-ray source for generating X-radiation that has a known spatial coherence within a predetermined distance from the X-ray source, and at least one evaluation unit for converting the X-radiation that has passed through the object that is arranged within the predetermined distance from the X-ray source into the phase contrast image of the object. Claims 1-20 are rejected to the extent they are enabled. Although Wilkins et al. do not specifically disclose the output of the X-ray source, it is disclosed to be very high. Page 336, first column, second paragraph states, "In general, the smaller the source size the better, provided that the total flux from the source is sufficient." Page 338, second column, top states, "Exposure times used here could have been considerably reduced by the use of more powerful microfocus sources and

more efficient detectors, which are available." It would have been obvious to one of ordinary skill in the art at the time the invention was made to use an X-ray source having an output within the range of 50 W up to and including 10 kW, to ensure sufficient dosage of X-rays for effective phase contrast imaging.

Allowable Subject Matter

10. Claim 8 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, and if the analyzer is defined as a multilayer reflector. Without this, the "analyzer" could read on a detector or a data processor.

Response to Arguments

11. Applicant's arguments filed 1/21/05 have been fully considered but they are not persuasive.

With respect to the objection of claim 9 as lacking antecedent basis for "analyzer", this has not been resolved. There is still lack of antecedent basis. It would be suggested to make claim 9 depend on claim 8, thereby overcoming the objection, although there would then be lack of antecedent basis for the monochromator, which is positively recited in claim 7.

With respect to the rejection of claim 5 under the second paragraph of 35 USC § 112, in spite of the applicant's assertion that parametric X-radiation is well known in the art, the applicant has not provided any evidence that it is and is challenged to do so. With respect to the rejection of claims 16 and 20 under the first paragraph of 35 USC § 112, in spite of the applicant's assertion that forming a phase contrast computer

Art Unit: 2882

tomogram is well known in the art, the applicant has not provided any evidence that it is and is challenged to do so.

With respect to the x-ray source power range, applicant believes the Wilkins et al. reference provides no significant disclosure whatsoever as to the output of the x-ray source. However, it does. Page 336, first column, second paragraph states, "In general, the smaller the source size the better, provided that the total flux from the source is sufficient." Page 338, second column, top states, "Exposure times used here could have been considerably reduced by the use of more powerful microfocus sources and more efficient detectors, which are available." The range being claimed (50W up to and including 10 kW) is very large, and it would be obvious to one of ordinary skill in the art to use power somewhere in this broad range.

Conclusion

12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Art Unit: 2882

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jurie Yun whose telephone number is 571 272-2497.

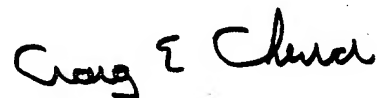
The examiner can normally be reached on Monday-Friday 8:30-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Glick can be reached on 571 272-2490. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jurie Yun
March 10, 2005



Craig E. Church
Primary Examiner